STEREO GRAPHIC EQUALIZER

GE-800

SERVICE MANUAL

KENWOOD

KENWOOD CORPORATION

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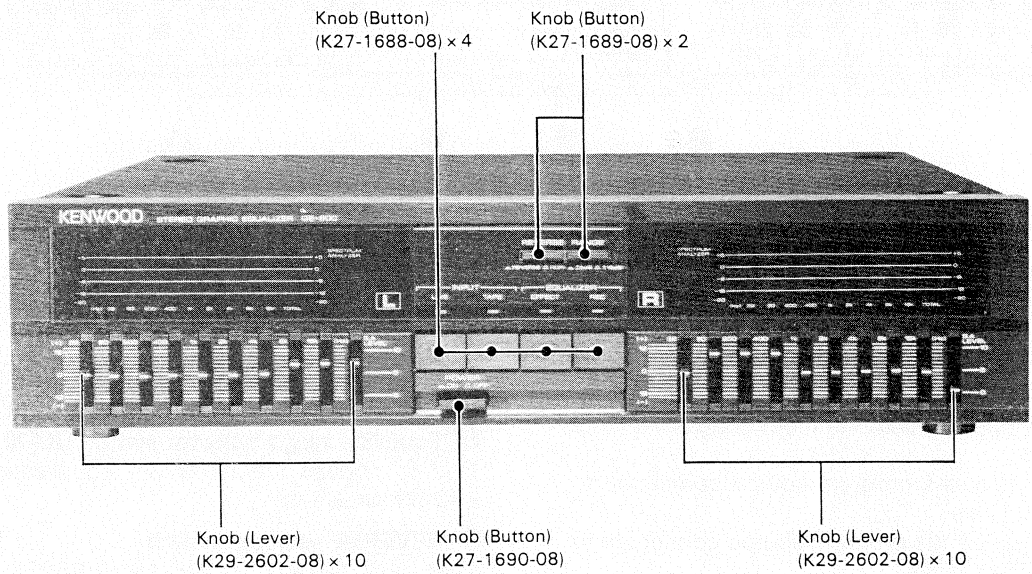
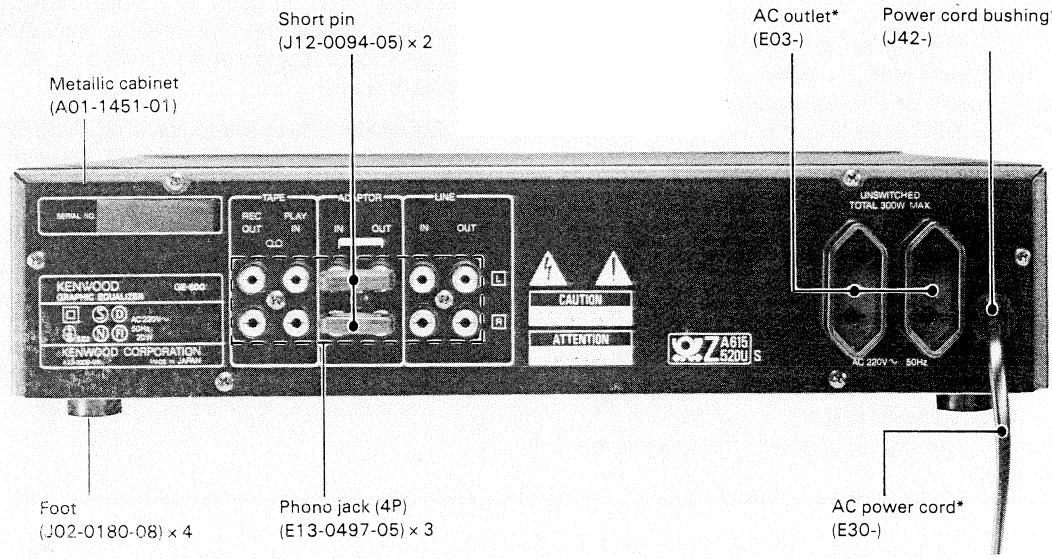
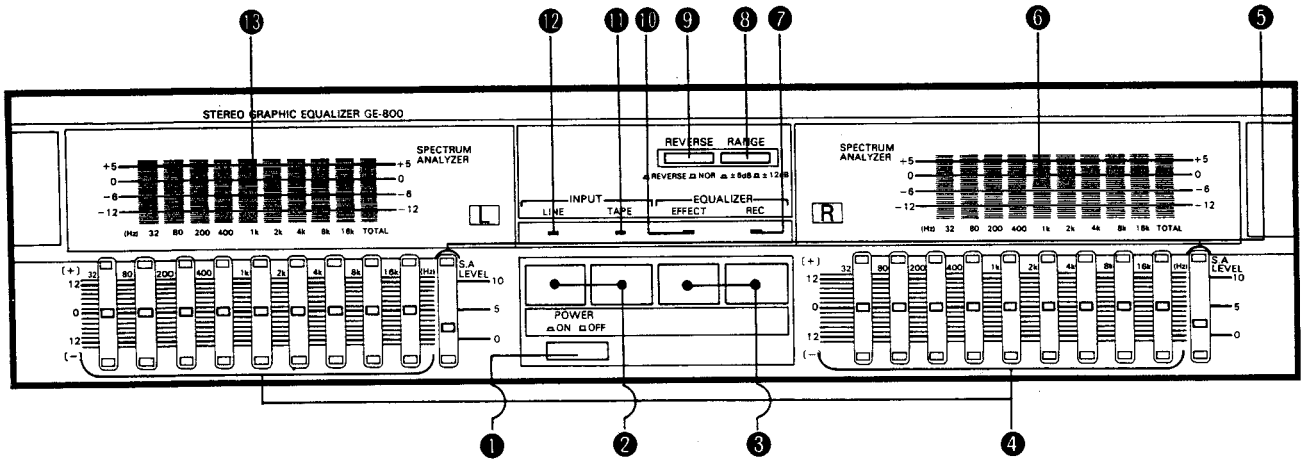




*Refer to parts list on page 8.

GE-800

CONTROLS AND INDICATORS



❶ POWER switch
Press the power switch to turn ON the power. To turn the power off, press the switch again to set it to the out position.

❷ INPUT selector switches
Use these switches to select the input program source to be equalized.

LINE — To equalize the program source connected to the LINE IN jacks.

TAPE — To equalize the program source connected to the TAPE PLAY jacks.

❸ EQUALIZER select switches

EFFECT — Press this switch to on the frequency characteristic will be modified by passing through the graphic equalizer.

REC — Press this switch to on signals will allow equalized to be recorded on tape.
If you want to monitor the equalized sounds, press the EQUALIZER REC switch to on.

❹ Level control (Right R /Left L channel)
Adjust these controls up and down to equalize the sound by ±12 dB or ±6 dB with the center frequency indicated. The right and left channels can be equalized separately.

❺ Spectrum analyzer level control (S·A LEVEL)
Used to adjust the display level of the spectrum analyzer display. When the control is moved upward, the level to be displayed increases.
When the control is moved downward, the level to be displayed decreases.

❻ Spectrum analyzer indicator (R right)
Displays of the right channel output level at the LINE OUT jacks according to frequency range.

❼ Equalizer recording indicator (EQUALIZER REC)
Lights when the EQUALIZER REC switch is set to on.

❽ Equalizer range selector switch (RANGE)
Used to choose the maximum equalization range to ±12 dB or ±6 dB.

❾ REVERSE selector switch
When this switch is set to REVERSE (▂), the equalizer effect which is opposite to that of the equalizer effect when the switch is set to NOR. (▔) is applied to the signals output at LINE OUT jacks.
This switch can be used as a noise reduction. For this purpose, increase the high level when recording a tape through this unit and set this switch to REVERSE when playing back.

❿ Equalizer effect indicator (EQUALIZER EFFECT)
Lights when the EQUALIZER EFFECT switch is set to on.

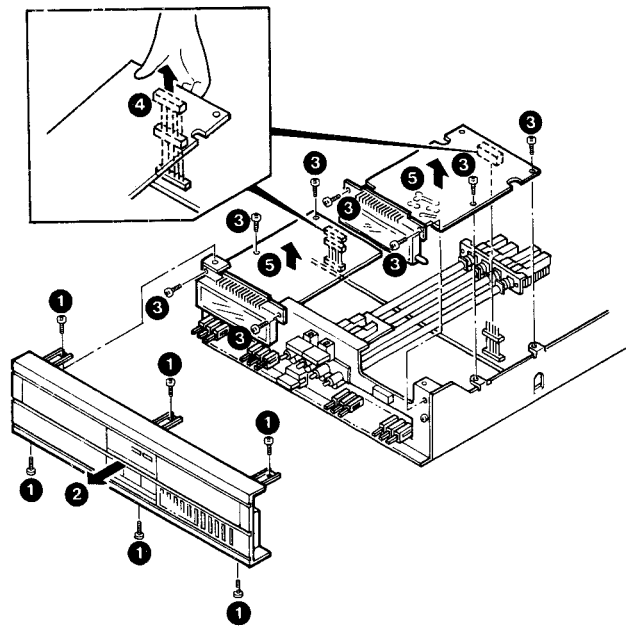
⓫ TAPE INPUT indicator
Lights when the TAPE INPUT switch is set to on.

⓬ LINE INPUT indicator
Lights when the LINE INPUT switch is set to on.

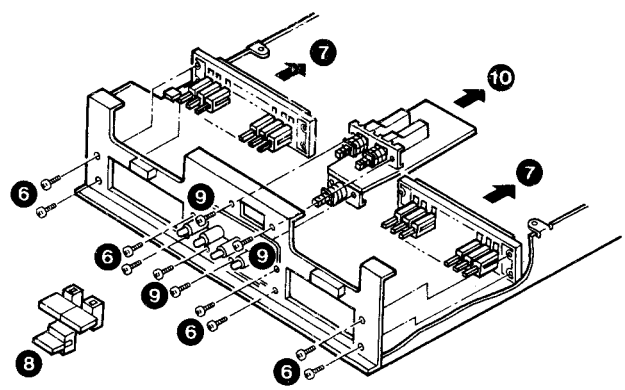
⓭ Spectrum analyzer indicator (L left)
Displays of the left channel output level at the LINE OUT jacks according to frequency range.

DISASSEMBLY FOR REPAIR

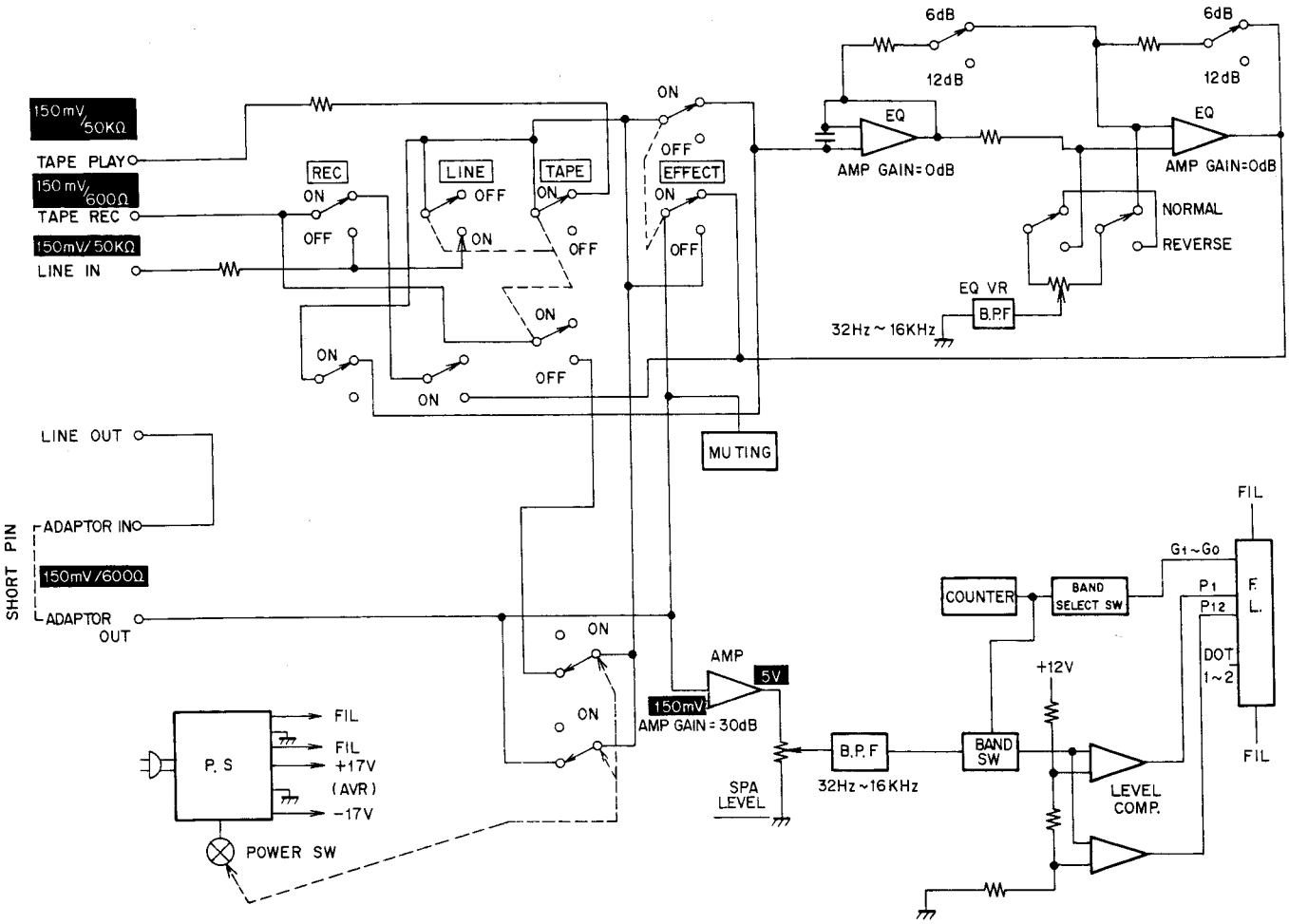
1. Remove the six screws (❶) above and below the front panel and remove the front panel by pulling it toward the front (❷).
2. Remove the eight screws (4 on L, 4 on R) retaining the Display PCBs (❸).
3. Lift up the Display PCBs and disconnect the connector (❹).
4. Remove the Display PCBs (❺).



5. Remove the eight screws (4 on L, 4 on R) retaining the Volume Ass'ies (❻).
6. Remove the Volume Ass'ies toward the rear (❼).
7. Remove the knobs of the push switches (❽).
8. Remove the four screws retaining the push switches (❾).
9. Remove the Power SW, Reverse SW and Range SW toward the rear (❿).



BLOCK LEVEL DIAGRAM

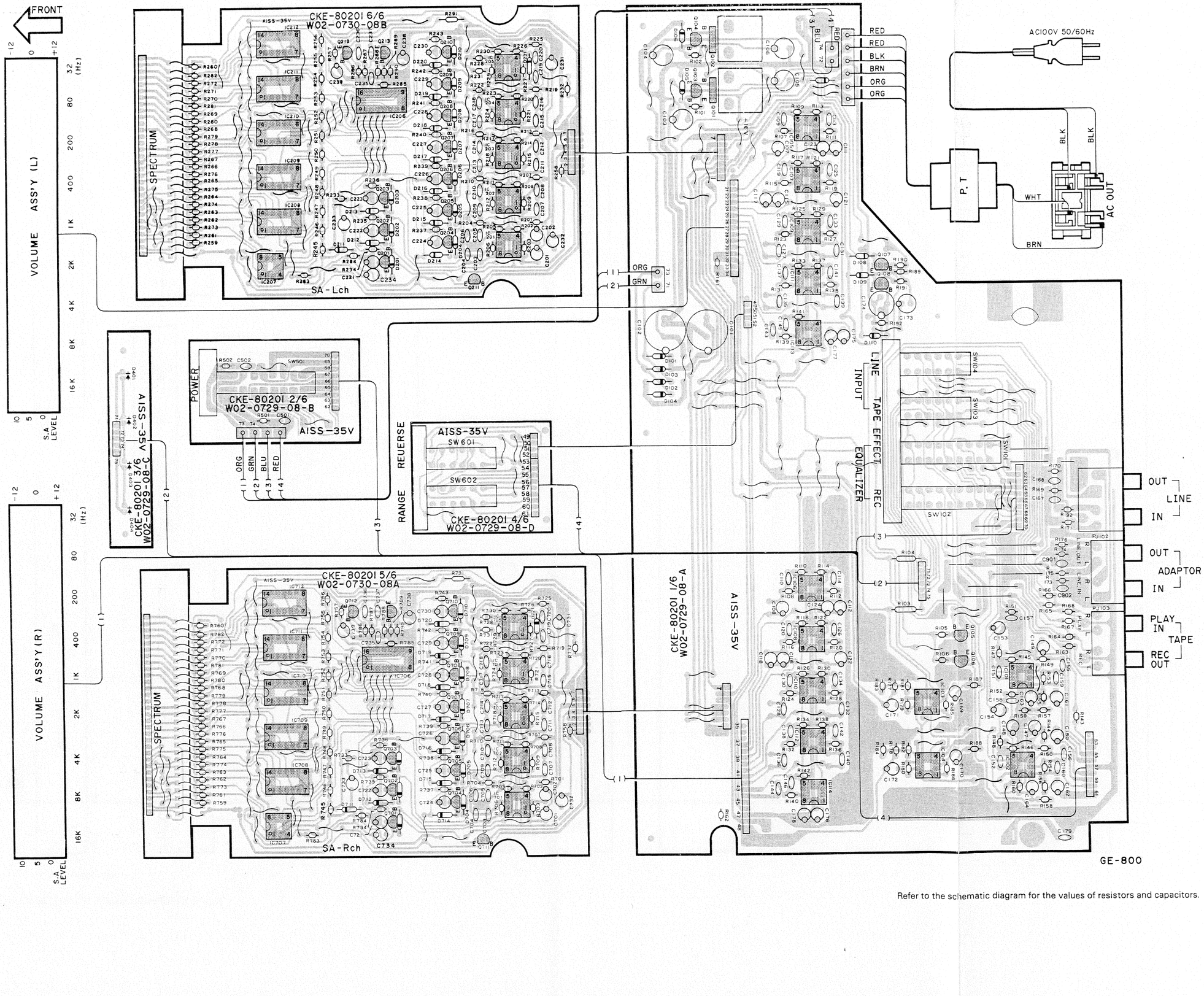


CIRCUIT DESCRIPTION

Component	Use/Function	Operation/Condition/Interchangeability
Q101, 102	Regulated power supply	Regulation of the +B and −B constant voltage.
Q105 ~ 108	Mute	Prevention of pop noise when power is turned ON/OFF.
Q201 ~ 210	FL display driver	Switching according to frequencies.
Q701 ~ 710	FL display driver	Switching according to frequencies.
IC101, 102	I/O buffer	Amplifier and buffer for EQ boost/cut.
IC103, 104	FL display	Amplification of display level.
IC105 ~ 114	EQ filter	Band-Pass Filter for EQ boost/cut.
IC201 ~ 205	FL display filter	Band-Pass Filter for FL display.
IC701 ~ 705	FL display filter	Band-Pass Filter for FL display.
IC206, 706	Clock generator	Generation of clock pulse for FL display.
IC207 ~ 212	FL display driver	
IC707 ~ 712	FL display driver	

PC BOARD

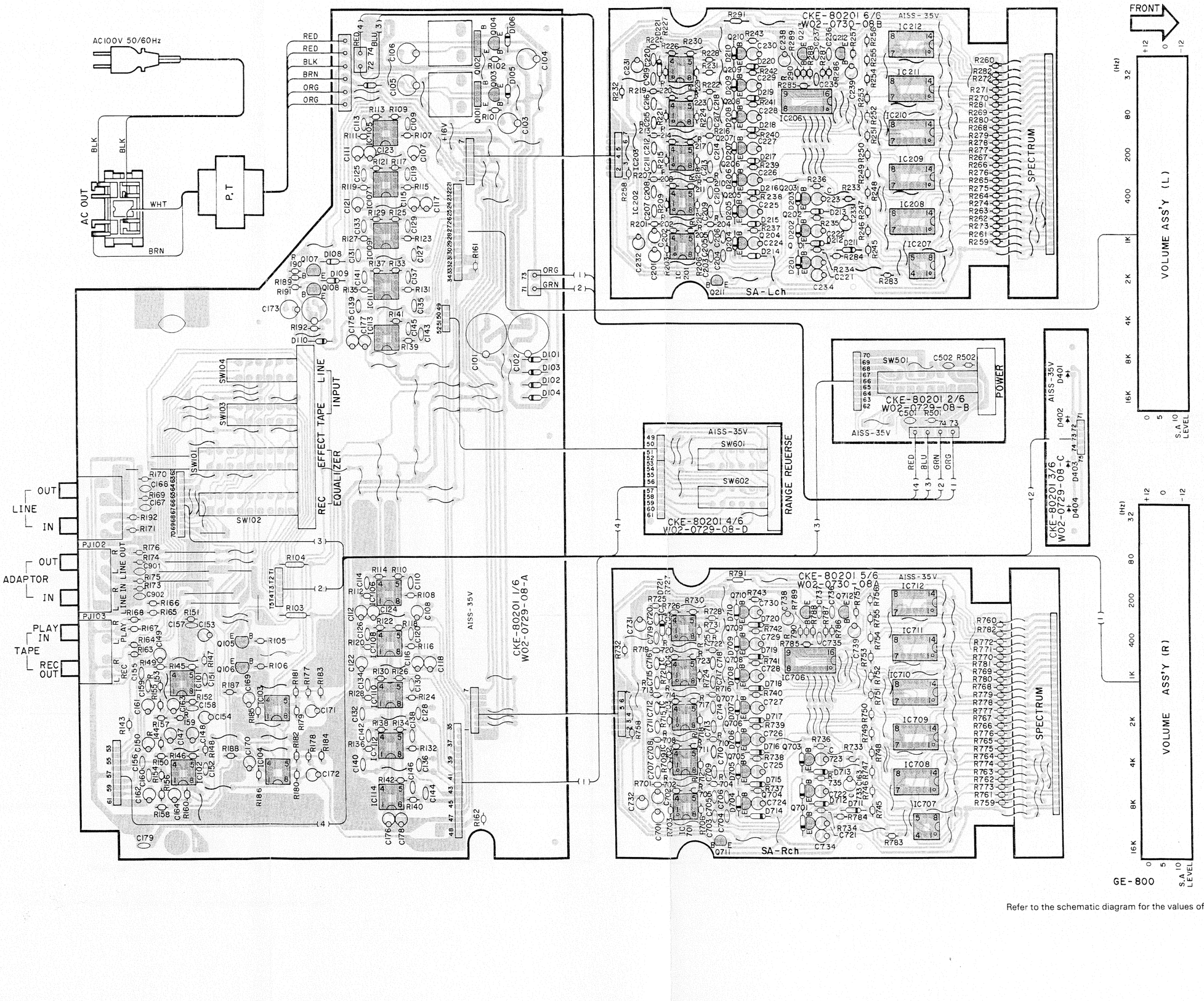
COMPONENT SIDE VIEW



Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD

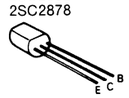
FOIL SIDE VIEW



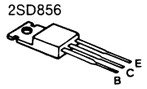
Refer to the schematic diagram for the values of resistors and capacitors.

(W02-0729-08)

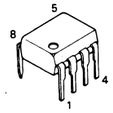
2SA1015
2SC1815
2SC2062
2SC2878



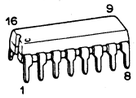
2SB761
2SD856



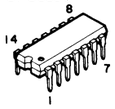
NJM4558DD



MN4017B



LA6339
UPC339C



IC101~114 : NJM4558DD

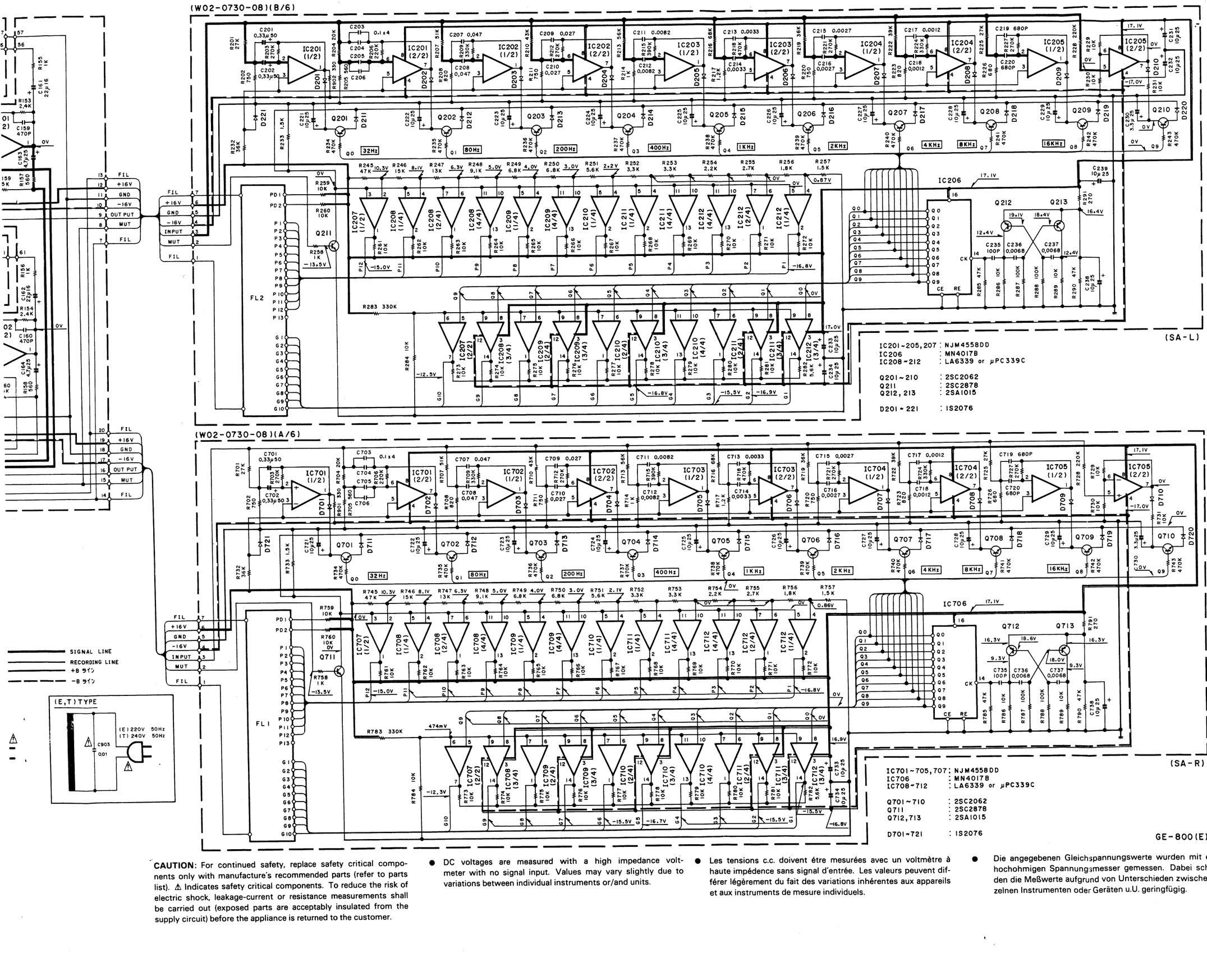
Q101 : 2SD856
Q102 : 2SB761
Q103,107,108 : 2SC1815
Q104 : 2SA1015
Q105,106 : 2SC2878

D101~104,110 : 1S5500B
D105,106 : 05Z18
D107,108 : 05Z8.2
D109 : 1S2076
D401~404 : B30-1163-08

SIGNAL LINE
RECORDING LINE
+B ライン
−B ライン

T101 (U,UE,M)TYPE
AC220V ~240V → AC110V ~120V
50Hz / 60Hz

(E,T)TYPE



GE-800(E)

CAUTION: For continued safety, replace safety critical components only with manufacture's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédence sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanden die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

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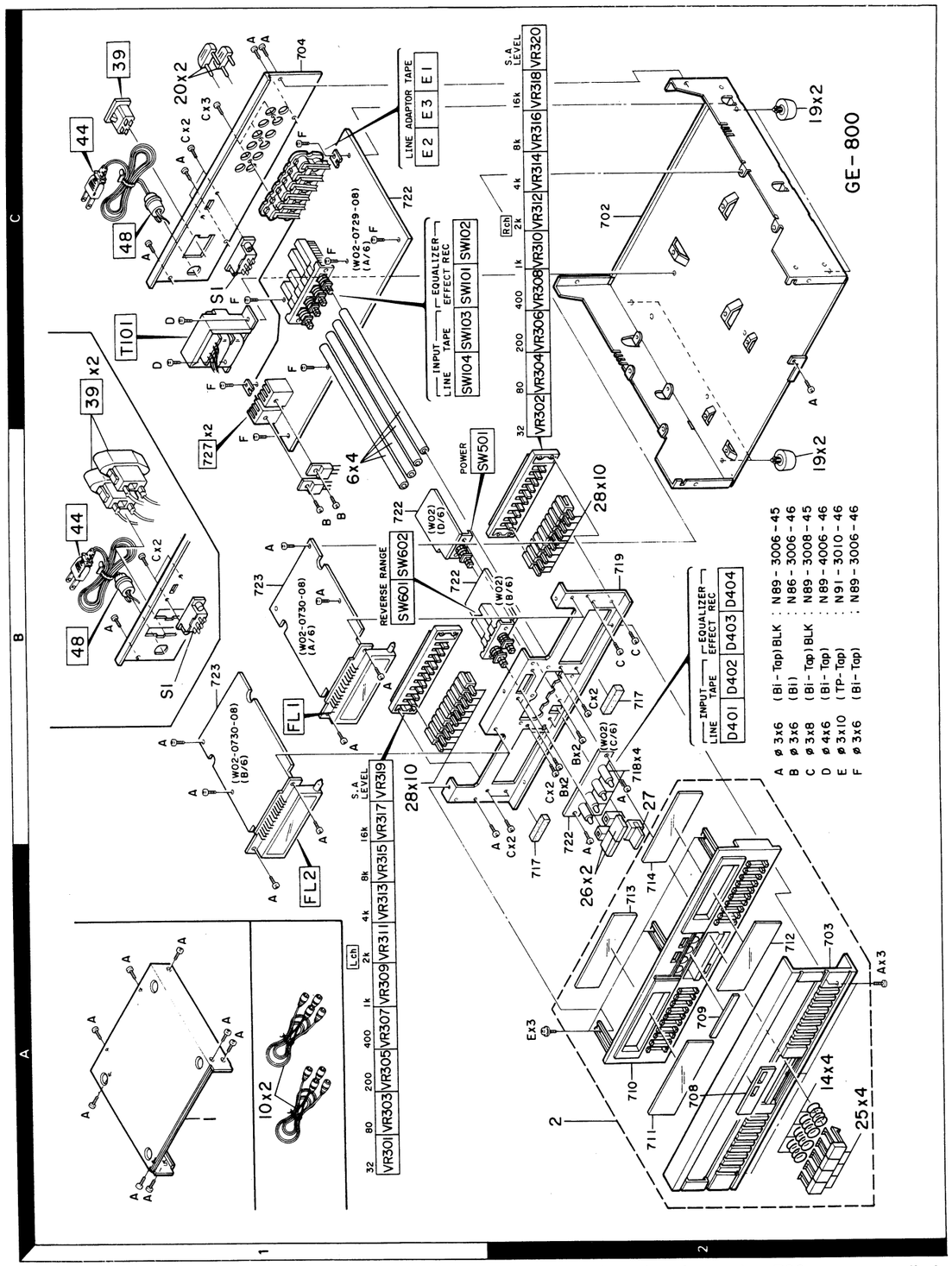
EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Telle ohne **Parts No.** werden nicht gellefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			GE-800			
1	1A		A01-1451-01	METALLIC CABINET		
2	2A	*	A20-5080-08	PANEL ASSY	EUUEMA	
2	2A	*	A20-5082-08	PANEL ASSY	T	
-			B46-0094-04	WARRANTY CARD	UUE	
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0123-03	WARRANTY CARD	T	
-		*	B50-6505-00	INSTRUCTION MANUAL(ENGLISH)	EUUEMA	
-		*	B50-6506-00	INSTRUCTION MANUAL(FRENCH)	EMA	
-		*	B50-6507-00	INSTRUCTION MANUAL(SPANISH)	MA	
-		*	B50-6508-00	INSTRUCTION MANUAL(ARABIC)	MA	
-		*	B50-6509-00	INSTRUCTION MANUAL(ENGLISH)	T	
-		*	B50-6510-00	INSTRUCTION MANUAL(G,D,I)	E	
-			B58-0223-04	CAUTION CARD	U	
-			B58-0513-04	CAUTION CARD	UE	
-			B58-0803-03	CAUTION CARD	E	
-			B59-0092-00	SURVICE DIRECTRY	UUE	
6	1B	*	D10-1801-08	ROD		
10	1A		E30-1469-08	AUDIO CORD		
14	2A	*	G09-0066-08	COMPRESSION SPRING(INPUT,EQ)		
-		*	H01-7350-08	ITEM CARTON BOX	EUUEMA	
-		*	H01-7351-08	ITEM CARTON BOX	T	
-			H10-1715-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0232-04	PROTECTION BAG		
-			H25-0262-08	PROTECTION BAG		
19	2B,2C		J02-0180-08	FOOT		
20	1C		J12-0094-05	PIN		
25	2A	*	K27-1688-08	KNOB(BUTTON) INPUT,EQUALIZER		
26	2A	*	K27-1689-08	KNOB(BUTTON) REVERSE,RANGE		
27	2B		K27-1690-08	KNOB(BUTTON) POWER		
28	1B,2B	*	K29-2602-08	KNOB ASSY(BUTTON)EQUALIZER		
			ELECTRIC UNIT (W02-0729-08)			
D401-404	2B		B30-1163-08	LED (INPUT,EQUALIZER)		
C101,102			CE04KW1V471M	ELECTRO 470UF 35WV		
C103,104			CE04KW1E101M	ELECTRO 100UF 25WV		
C105,106			CE04KW1V471M	ELECTRO 470UF 35WV		
C107,108		*	CE04KW1C4R7M	ELECTRO 4.7UF 16WV		
C109,110			CF92FV1H124J	MF 0.12UF J		
C111,112		*	CE04KW1H1R0M	ELECTRO 1.0UF 50WV		
C113,114			CF92FV1H683J	MF 0.068UF J		
C115,116			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C117,118			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C119,120			CF92FV1H183J	MF 0.018UF J		
C121-124			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C125,126			CF92FV1H123J	MF 0.012UF J		
C127,128			CF92FV1H154J	MF 0.15UF J		
C129,130			CF92FV1H682J	MF 6800PF J		
C131,132			CF92FV1H683J	MF 0.068UF J		
C133,134			CF92FV1H472J	MF 4700PF J		

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⚠ indicates safety critical components.

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C135,136			CF92FV1H393J	MF 0.039UF J		
C137,138			CF92FV1H222J	MF 2200PF J		
C139,140			CF92FV1H183J	MF 0.018UF J		
C141,142			CF92FV1H222J	MF 2200PF J		
C143,144			CF92FV1H103J	MF 0.010UF J		
C145,146			CF92FV1H122J	MF 1200PF J		
C147,148			CE04KW1E100M	ELECTRO 10UF 25WV		
C149,150			CE04KW1C220M	ELECTRO 22UF 16WV		
C151,152			CK45B1H101J	CERAMIC 100PF J		
C153,154		*	CE04KW1H1R0M	ELECTRO 1.0UF 50WV		
C155-158			CK45B1H101J	CERAMIC 100PF J		
C159,160		*	CK45B1H471J	CERAMIC 470PF J		
C161,162			CE04KW1C220M	ELECTRO 22UF 16WV		
C163,164		*	CE04KW1C4R7M	ELECTRO 4.7UF 16WV		
C167,168			CK45B1H101J	CERAMIC 100PF J		
C169,170			CE04KW1E100M	ELECTRO 10UF 25WV		
C171,172		*	CE04KW1H1R0M	ELECTRO 1.0UF 50WV		
C173			CE04KW1E101M	ELECTRO 100UF 25WV		
C174			CE04KW1V221M	ELECTRO 220UF 35WV		
C175-178			CE04KW1E100M	ELECTRO 10UF 25WV		
C179		*	CK45B1H473J	CERAMIC 0.047UF J		
C501,502		*	CK45B1H104J	CERAMIC 0.10UF J		
C901,902			CK45B1H102K	CERAMIC 1000PF K		
⚠ C903			C91-0647-05	CERAMIC 0.01UF P	AET	
⚠ 39	1B		E03-0055-05	AC OUTLET	A	
⚠ 39	1C		E03-0074-08	AC OUTLET	UUEM	
⚠ 44	1C		E30-0956-08	AC POWER CORD	T	
⚠ 44	1C		E30-0957-08	AC POWER CORD	EA	
⚠ 44	1C		E30-0958-08	AC POWER CORD	UUEM	
E1 -3	1C		E13-0497-05	PHONO JACK (TAPE,ADAPTER,LINE)		
⚠ 48	1C		J42-0120-08	POWER CORD BUSHING		
⚠ 48	1C		J42-0121-08	POWER CORD BUSHING	AET	
⚠ T101	1C	*	L01-7472-08	POWER TRANSFORMER	E	
⚠ T101	1C		L01-7475-08	POWER TRANSFORMER	UEUM	
⚠ T101	1C		L01-7477-08	POWER TRANSFORMER	T	
⚠ T101	1C		L01-7478-08	POWER TRANSFORMER	A	
VR301-320	1A,2C		R29-9015-08	POTENTIOMETER (GE)		
⚠ S1	1B,1C		S90-0083-08	SLIDE SWITCH	AUUEM	
SW101-104	1C	*	S42-4051-08	PUSH SWITCH (INPUT,EQUALIZER		
⚠ SW501	2B		S40-6030-08	PUSH SWITCH (POWER)		
SW601,602	1B	*	S42-2146-08	PUSH SWITCH (REVERSE,RANGE)		
D101-104		*	1S5500B	DIODE		
D105,106		*	05Z18	ZENER DIODE		
D107,108			05Z8.2	ZENER DIODE		
D109			1S2076	DIODE		
D110		*	1S5500B	DIODE		
FL1 ,2	1A,1B		FIP10AW19Y	FLOURESCENT INDICATOR TUBE		
IC101-114			NJM4558DD	IC(OP AMP X2)		
Q101		*	2SD856	TRANSISTOR		
Q102		*	2SB761	TRANSISTOR		
Q103		*	2SC1815	TRANSISTOR		
Q104			2SA1015	TRANSISTOR		

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Q105,106			2SC2878	TRANSISTOR		
Q107			2SC1815	TRANSISTOR		
Q109			2SC1815	TRANSISTOR		
Q711			2SC2878	TRANSISTOR		
EQUALIZER UNIT (W02-0730-08)						
C201,202			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C203-206			CF92FV1H104J	MF 0.10UF J		
C207,208			CF92FV1H473J	MF 0.047UF J		
C209,210			CF92FV1H273J	MF 0.027UF J		
C211,212			CF92FV1H822J	MF 8200PF J		
C213,214			CF92FV1H332J	MF 3300PF J		
C215,216			CF92FV1H272J	MF 2700PF J		
C217,218			CF92FV1H122J	MF 1200PF J		
C219,220			CK45B1H681K	CERAMIC 680PF K		
C221-229			CE04KW1E100M	ELECTRO 10UF 25WV		
C230		*	CE04KW1E3R3M	ELECTRO 3.3UF 25WV		
C231-234			CE04KW1E100M	ELECTRO 10UF 25WV		
C235			CK45B1H101K	CERAMIC 100PF K		
C236,237			CF92FV1H682J	MF 6800PF J		
C238,239			CE04KW1E100M	ELECTRO 10UF 25WV		
C701,702			CE04KW1HR33M	ELECTRO 0.33UF 50WV		
C703-706			CF92FV1H104J	MF 0.10UF J		
C707,708			CF92FV1H473J	MF 0.047UF J		
C709,710			CF92FV1H273J	MF 0.027UF J		
C711,712			CF92FV1H822J	MF 8200PF J		
C713,714			CF92FV1H332J	MF 3300PF J		
C715,716			CF92FV1H272J	MF 2700PF J		
C717,718			CF92FV1H122J	MF 1200PF J		
C719,720			CK45B1H681K	CERAMIC 680PF K		
C721-729			CE04KW1E100M	ELECTRO 10UF 25WV		
C730		*	CE04KW1E3R3M	ELECTRO 3.3UF 25WV		
C733,734			CE04KW1E100M	ELECTRO 10UF 25WV		
C735			CK45B1H101K	CERAMIC 100PF K		
C736,737			CF92FV1H682J	MF 6800PF J		
C738			CE04KW1E100M	ELECTRO 10UF 25WV		
D201-221			1S2076	DIODE		
D701-721			1S2076	DIODE		
IC201-205			NJM4558DD	IC(OP AMP X2)		
IC206		*	MN4017B	IC(5-STAGE JOHNSON COUNTER)		
IC207			NJM4558DD	IC(OP AMP X2)		
IC208-212			LA6339	IC(QUAD COMPARATOR)		
IC208-212			UPC339C	IC(QUAD COMPARATOR)		
IC701-705			NJM4558DD	IC(OP AMP X2)		
IC706		*	MN4017B	IC(5-STAGE JOHNSON COUNTER)		
IC707			NJM4558DD	IC(OP AMP X2)		
IC708-712			LA6339	IC(QUAD COMPARATOR)		
IC708-712			UPC339C	IC(QUAD COMPARATOR)		
Q201-210			2SC2062	TRANSISTOR		
Q211			2SC2878	TRANSISTOR		
Q212,213			2SA1015	TRANSISTOR		
Q701-710			2SC2062	TRANSISTOR		
Q711			2SC2878	TRANSISTOR		
Q712,713			2SA1015	TRANSISTOR		

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SPECIFICATIONS

Equalizer characteristic	
Variable range	±12 dB/±6 dB (L & R independently adjustable)
Center frequencies	32 Hz, 80 Hz, 200 Hz, 400 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz
Frequency response	10 Hz—40 kHz ±1.0 dB
Total harmonic distortion	Less than 0.006% (20 Hz—20 kHz, all controls flat, output 1 V)
	Less than 0.003% (1 kHz, all controls flat, output 1 V)
Maximum output voltage	6 V (1 kHz, THD 0.05%, RL 47 k ohms)
S/N ratio	95 dB (IHF-A network, 1 V)
Input impedance	50 k ohms
Output impedance	1.5 k ohms
Power consumption	20 W
Dimensions	W 340 mm (13-3/8")
	H 84 mm (3-5/16")
	D 351 mm (13-13/16")
Weight (Net)	3.3 kg (6.6 lb)

Note:
We follow a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.